Recipe For A Better Winery

Equal parts technology and business acumen give winemaker Gallo a better view of its processes, business, and customers

Gallo is focused on real-time information about its products in the supply chain, VP and CIO Kushar says.

IT'S 95 DEGREES IN MODESTO, CALIF., AN AGRIculturally oriented city of more than 200,000 people 90 miles east of San Francisco. It's hotter still on the factory floor of the Gallo Glass Co., where four furnaces turn sand, limestone, soda ash, and recycled shards into molten glass. It feels a few degrees shy of blistering. Over the roaring fans and the hiss of hydraulics, and through our earplugs, George White, IS manager, shouts that the ambient temperature can reach 140 degrees.

Every few seconds, fireballs of liquid glass fall from the furnaces overhead, careening down rails into bottle molds. Air-cooled to 2,000 degrees Fahrenheit, the glass freezes, taking solid form. Robotic arms extend and retract with menacing speed, releasing wine bottles onto conveyor belts. A handful of workers in protective gear tend to the assembly line. "It used to be people everywhere," White says. "Now it's all automated."

The information gleaned by the automated systems is fed into the shop-control system, which provides instant visual feedback about manufacturing to operators in the air-conditioned control room and on the shop floor. Amid heavy equipment that evokes Eisenhower-era manufacturing, 42-inch Sony flat panels display the up-to-the-second production statistics necessary to run at peak efficiency.

White's operation produces 2.5 million wine bottles a day for its parent company, E.&J. Gallo Winery, the largest wine producer in the world. Gallo also ranks first among the *InformationWeek* 500 because of successful innovation across its business practices, technology methods, and IT-staff management. The company has a long history of forward-thinking technology practices, as reflected by previous *InformationWeek* 500 rankings: third in 2003, ninth in 2002, 30th in 2001, and 177th in 2000.

"A lot of people recognize them as an innovative sales

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and marketing company," says Paul Tincknell, a partner in wine sales and marketing consulting firm Tincknell & Tincknell. "Much of that is being able to manage their technology effectively." The other major players in the industry, including Allied Domencq, Beringer Blass, Bronco, Constellation, Kendall Jackson, and Robert Mondavi, are no strangers to IT. Wine-industry consultant Jon Fredrikson of Gomberg, Fredrikson & Associates singles out the Australian wineries as particularly advanced, pointing to their adoption of automated pruning systems to compensate for labor shortages. But Gallo remains ahead of the competition, Tincknell says. "Their IT program is very advanced."

That a winery would want to manufacture its own bottles offers some insight into the breadth and depth of the company's concerns. It's not just that bottles represent a major packaging cost for wineries. Owning a glass company lets Gallo bring new wine-bottle designs to market quickly, without tipping off competitors, and secures and controls a crucial portion of its supply chain, says VP and CIO Kent Kushar.

Watch a few thousand bottles soldier along conveyor belts to be filled, sealed, labeled, and boxed, and you

THAT GALLO MAKES ITS OWN BOTTLES SHOWS THE BREADTH OF ITS BUSINESS.

start to get a sense of the magnitude of Gallo's supply chain. Information, and the technology to gather and use it, is essential to manage such complicated production. Gallo recently upgraded two of its 23 bottling lines to increase productivity, visibility, and control. "We had a need for better information systems," says Ulli Thiersch, VP of manufacturing. "We wanted our operators to have better real-time information."

There's a reason Gallo is so concerned about real-time information on products in the supply chain. "In the wine business, it's a three-tier business—meaning, as a winery, you must sell to a distributor who must then sell to a retailer," Kushar says. "So that three-tier supply chain requires you to have visibility to all those levels when you're moving product."

There's a bit of irony here: Visibility is something of an issue for Gallo. The privately held company is known for preferring privacy. "They're very secretive," Tincknell says. In fact, there are no signs identifying the Gallo facility in Modesto. Not that its location is any secret to locals. After all, Gallo is Modesto's largest private-sector employer, providing work for more than 2,300 people in the area and 4,600 people all told. Its estimated revenue

in 2002 was $1.8 billion. Last year, it sold about 65 million cases of wine. Most wineries sell several thousand.

The total U.S. market in 2003 was 265 million cases, Fredrikson says. That's up 5% from 2002. Despite a slower 2% growth rate in the first half of this year, the result of a strong euro that has made French and Italian imports more expensive in the United States, Fredrikson nonetheless believes it's a buyer's market. "Today is a dream market for American consumers," he says. "There's never been such high quality for the price."

Technology is partly the cause. The wine industry is using technology to drive efficiency, consultant Fredrikson says. And Gallo is leading the way.

Though the company is quiet about its operations, it wants shoppers to know exactly where to find its products. Gallo is achieving this through a new product-accountability system, which has just been implemented at regional distribution centers. The system's purpose is to make inventory accessible in real time to the winery's 630 distribution customers. It includes a complex manufacturing work-order system, also known as a warehouse-management system, that coordinates production, component replenishment, inventory, and shipment. That system interfaces with forklifts and automatic guided vehicles using Wi-Fi and integrates with order- and transportation-management systems. "The value to the business is that we move the inventory closer to our customers," Kushar says. "It has shortened the order-to-door cycle by 10 days." In some cases, orders can be fulfilled the day they're placed.

Before the system was implemented, everything was shipped out of Gallo's Modesto facility. Orders, which often came via fax, would be filled there, put on rail cars, and shipped. That could take up to six weeks.

Now all the orders are electronic. Availability information is provided, invoices are rendered, and payment is taken electronically. "You know exactly what you're going to get, by eligibility, by product, by place," Kushar says. "And we manage it across 50 states and 90 countries because they have different rules."

Different rules apply to Gallo, too, because of its sheer size. It buys roughly 1 million tons of grapes annually, about one-third of the crop produced in California. During the three-month crush, trucks deliver the grapes in 25-ton truckloads. On any given day, you might see 800 to 900 trucks arriving to off-load their cargo. Thanks to the company's transportation-management system, harvested grapes typically get from field to factory in no more than four hours.

Kushar is quick to credit others. He speaks reverently

of the support he gets from above—the Gallo family—and from his staff. And it's clear the respect he gives is returned by his colleagues. He talks about "ruthless execution" but leads by consensus and delegation. "People work like fools if they're trusted," he says.

It also helps if you give them effective tools. Winemaking at Gallo involves not just grapes, but BlackBerrys and iPaqs. The company has an affinity for wireless and counts five or six initiatives in varying stages of completion. It relies on wireless communication in its manufacturing facility and more recently in vineyards. Field personnel use handhelds to grade sample grapes, and they're testing links to data that includes global-positioning-system coordinates, infrared satellite shots, and weather pictures. Shop-floor managers use PDAs to track wine volume in storage tanks.

The distributor sales force relies on PDAs as well. "We've got about 1,000 people carrying iPaqs now," Kushar says. "They can do store surveys, they can do order entry, and they can take a look at what that store has purchased."

Wireless technology has had a dramatic impact on the efficiency of "voice picking," a method for dealing with spoken orders. IPaqs transmit recorded voices to the nearest distribution center, where the voice-picking system translates them and directs a person on the shop floor to the requested bottles. A customer might order 10 bottles of different wines to restock a grocery-store shelf. Each of those bottles has to be located in the warehouse so the order can be assembled. Before voice picking, a distribution center might process orders for 220 bottles an hour, says Mike Magoulas, VP of management services. The new system has more than doubled productivity to 450 to 500 bottles an hour. "The innovation has given us a huge competitive edge," he says.

Its next big IT project, due to be completed early next year, is an update to production control, a system Kushar calls Gallo Wine Manager. "One of the things that you want to be able to look at is taste versus cost," he explains. "Because we have wines that cross a huge financial range, from everyday table wines to the very expensive wines, you want the winemakers to understand what the cost of that blend is." The system will offer a cost model that lets winemakers see the cost ramifications of any recipe. Ultimately, it will be integrated with the company's cellar-management and bottling systems.

The scope of Gallo's product line—95 brands sold across 90 countries—demands some degree of information sharing with distributors and retailers to support sales and marketing efforts. The company does more than that. It has a system called Gallo Edge that helps its customers, such as Albertsons Inc. and Wal-Mart Stores Inc., sell more efficiently and effectively. The software helps manage wine placement and profitability, so retailers can look at sales by brand in any of their outlets.

"Wal-Mart lets us use Retail Link data," says Kushar, referring to Wal-Mart's Web-based system for relaying sales information to its suppliers. "We then corroborate it against the pricing model and their cost model, and we produce by-bottle profitability so that the buyers can look at what products are moving, what products aren't, and are they making money on them." The key element is that Gallo never sees the results that the buyers—meaning retailers—get back from using the Gallo system, Kushar says. "So even though it's our technology, it uses their data. We don't see any of it."

For all the sophistication of Gallo's network architecture, the physical architecture that houses the company's IT operation stands in stark contrast to the elegant design of the company's administration building and the industrial credibility of its production facilities. The Gallo Technology Center is reminiscent of the sort of impermanent building thrown up to house construction contractors during large projects. It was intended to be a temporary home for three years. That was six years ago.

But the aesthetic disconnect belies how well Gallo's IT complements its business. Though there are always issues to be ironed out between IT and other parts of the company, the customer-centric approach of Kushar and his team has made for a positive partnership with the rest of Gallo. "Some of that problem resolution comes because we're starting to learn the business and they're starting to learn the technology," Kushar says.

It's fitting that among the art on the walls of the Gallo Technology Center is a reproduction of Buonaccorso Ghiberti's sketch of Filippo Brunelleschi's lantern hoist. This is a group that's always looking for a better tool to illuminate the supply chain. —THOMAS CLABURN (tclaburn@cmp.com)